

What is claimed is:

1. A clearcoat coating composition, comprising
 - (a) a least one member selected from the group consisting of
 - (1) an acrylic polymer having both secondary hydroxyl functionality and functionality selected from the group consisting of carbamate functionality, urea functionality, and both carbamate and urea functionality and
 - (2) a mixture of a first acrylic polymer with secondary hydroxyl functionality and a second acrylic polymer with functionality selected from the group consisting of carbamate functionality, urea functionality, and both carbamate and urea functionality;
 - (b) a carbamate-functional or urea-functional material that is the reaction product of
 - (1) a compound comprising a primary carbamate or primary urea group and an hydroxyl group and
 - (2) a compound that is reactive with hydroxyl groups on a plurality of molecules of compound (1), but that is not reactive with the carbamate or urea groups on compound (1); and
 - (c) a crosslinking component comprising a crosslinker reactive with active hydrogen groups.
2. A clearcoat coating composition according to claim 1, wherein said composition comprises acrylic polymer (a)(1).

3. A clearcoat coating composition according to claim 2, wherein said acrylic polymer (a)(1) has primary carbamate functionality.
4. A clearcoat coating composition according to claim 1, wherein said composition comprises mixture (a)(2).
5. A clearcoat coating composition according to claim 4, wherein said second acrylic polymer has primary carbamate functionality.
6. A clearcoat coating composition according to claim 1, wherein said secondary hydroxyl functionality is formed by reaction of a glycidyl group with a carboxylic acid group.
7. A clearcoat coating composition according to claim 1, wherein said acrylic polymer or acrylic polymers of (a) have weight average molecular weights of at least about 2400.
8. A clearcoat coating composition according to claim 1, wherein said acrylic polymer or acrylic polymers of (a) have weight average molecular weights of at least about 4000.

9. A clearcoat coating composition according to claim 1, wherein said acrylic polymer or acrylic polymers of (a) have weight average molecular weights of up to about 5000.

10. A clearcoat coating composition according to claim 1, wherein said acrylic polymer (a)(1) or said first acrylic polymer of (a)(2) has an hydroxyl equivalent weight of up to about 600 grams per equivalent.

11. A clearcoat coating composition according to claim 1, wherein said acrylic polymer (a)(1) or said first acrylic polymer of (a)(2) has an hydroxyl equivalent weight of at least about 150 grams per equivalent.

12. A clearcoat coating composition according to claim 1, wherein said acrylic polymer (a)(1) or said second acrylic polymer of (a)(2) has a carbamate equivalent weight of up to about 700 grams per equivalent.

13. A clearcoat coating composition according to claim 1, wherein said acrylic polymer (a)(1) or said second acrylic polymer of (a)(2) has a carbamate equivalent weight of at least about 350 grams per equivalent.

14. A clearcoat coating composition according to claim 1, wherein compound (b)(1) is a member selected from the group consisting of hydroxyethyl carbamate, hydroxypropyl carbamate, and hydroxybutyl carbamate.

15. A clearcoat coating composition according to claim 1, wherein compound (b)(2) is a member selected from the group consisting of the isocyanurate of isophorone diisocyanate and the isocyanurate of hexamethylene diisocyanate.

16. A clearcoat coating composition according to claim 1, wherein the clearcoat coating composition comprises about 5 weight percent to about 30 weight percent of the compound (b), based on the vehicle weight.

17. A clearcoat coating composition according to claim 1, wherein the clearcoat coating composition comprises about 10 weight percent to about 15 weight percent of the compound (b), based on the vehicle weight.

18. A clearcoat coating composition according to claim 1, further comprising a carbamate-functional or urea-functional material comprising at least two functional groups, at least one of which is a carbamate or urea group that is the reaction product of

- (1) an hydroxyl group of a first compound that is the result of a ring-opening reaction between a compound with an epoxy group and a compound with an organic acid group and
- (2) cyanic acid or a carbamate or urea group-containing compound.

19. A clearcoat coating composition according to claim 1, further comprising a carbamate-functional or urea-functional material that is the reaction product of

- (1) a compound comprising a carbamate or urea group and an active hydrogen group that is reactive with (2), and
- (2) a lactone or a hydroxy carboxylic acid.

20. A clearcoat coating composition according to claim 1, further comprising a carbamate-functional or urea-functional material that is the reaction product of

- (A) the reaction product of
 - (1) a compound comprising a primary carbamate or primary urea group and an hydroxyl group and
 - (2) a lactone or a hydroxy carboxylic acid

and

- (B) a compound that is reactive with hydroxyl groups on a plurality of molecules of compound (A), but that is not reactive with the carbamate or urea groups on compound (A).

21. A clearcoat coating composition according to claim 1, further comprising a carbamate-functional or urea-functional material that is the reaction product of

(A) the reaction product of

- (1) a compound comprising a primary carbamate or primary urea group and an hydroxyl group and
- (2) a lactone or a hydroxy carboxylic acid

and

(B) a compound that converts an hydroxyl group on (A) to a carbamate group, or a compound comprising a group that is reactive with a hydroxyl group and a carbamate or urea group or group that can be converted to carbamate or urea.

22. A clearcoat coating composition according to claim 1, further comprising a carbamate-functional material that is the reaction product of

- (1) a first material that is the reaction product of a mixture including at least a polyisocyanate and an active hydrogen-containing chain extension agent with
- (2) a compound comprising a group that is reactive with said first material and a carbamate group or group that can be converted to a carbamate group.

23. A clearcoat coating composition according to claim 1, comprising a further material having at least two carbamate groups and a hydrocarbon moiety having about 24 to about 72 carbon atoms.

24. A clearcoat coating composition according to claim 23, wherein the further material has from two to four carbamate groups.

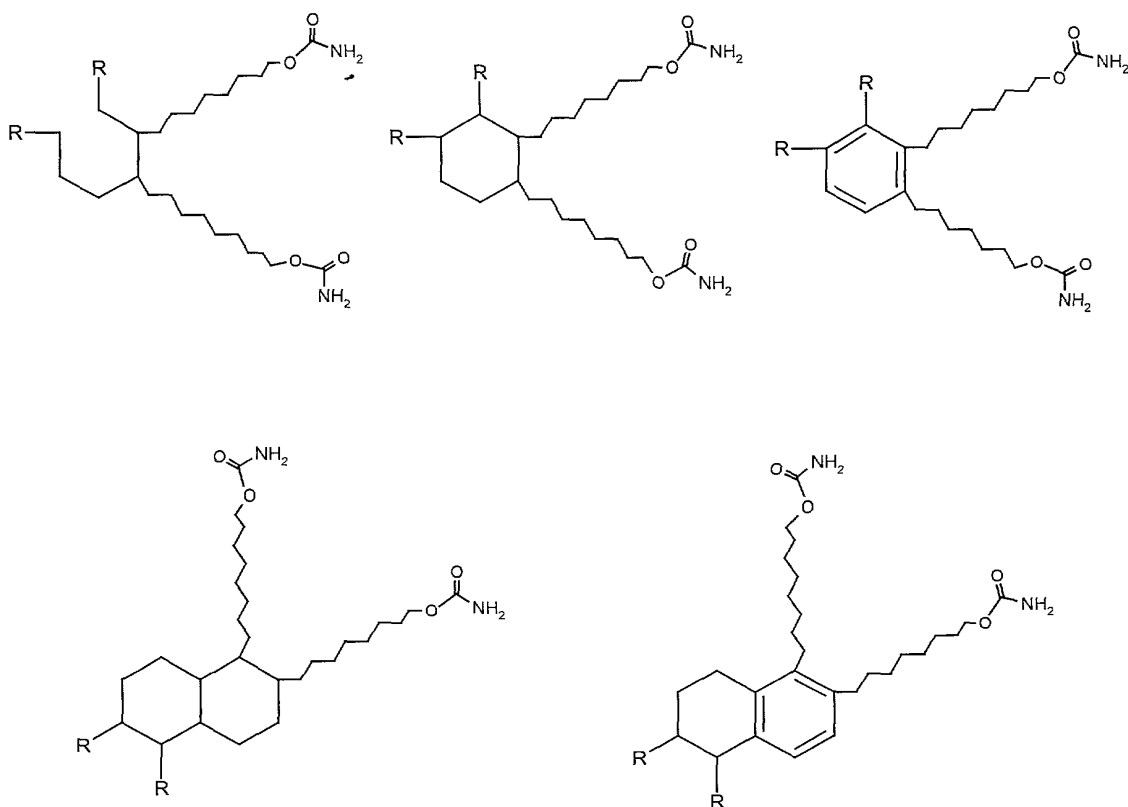
25. A clearcoat coating composition according to claim 23, wherein the further material has two carbamate groups.

26. A clearcoat coating composition according to claim 23, wherein the hydrocarbon moiety has from about 36 to about 72 carbon atoms.

27. A clearcoat coating composition according to claim 23, wherein the hydrocarbon moiety has from about 36 to about 54 carbon atoms.

28. A clearcoat coating composition according to claim 23, wherein the hydrocarbon moiety has about 36 carbon atoms.

29. A clearcoat coating composition according to claim 1, comprising a further material having a structure selected from the group consisting of



wherein each R group is independently an alkyl of 5 to 8 carbon atoms.

30. A clearcoat coating composition according to claim 1, wherein (c) is an aminoplast crosslinker.

31. A clearcoat coating composition according to claim 1, wherein (c) is a melamine formaldehyde crosslinker.

32. A method of assembling an automotive vehicle, comprising steps of
- (a) applying to the vehicle a clearcoat coating composition according to claim 1,
 - (b) curing the applied composition to produce a cured clearcoat, and
 - (c) applying directly over the cured clearcoat a glass bonding adhesive.